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# ANALYSIS OF APPLE PRICES AND PRICE SPREADS

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ECONOMIC RESEARCH SERVICE

MARKETING ECONOMICS DIVISION

U.S. DEPARTMENT OF AGRICULTURE



# Analysis of Apple Prices and Price Spreads

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**Abstract**—“*Analysis of Apple Prices and Price Spreads*”: Washington Red Delicious apple prices increased at all marketing levels between 1960/61 and 1971/72. The shipping point-retail price spread; packing, storage, and selling costs; and returns to Washington growers all increased. Washington growers maintained their share of the consumers' dollars for fresh apples, although their returns were highly variable. Growers of bagged Eastern McIntosh and Midwestern Jonathan apples for the fresh market and of Eastern processing apples for applesauce received less than 20 percent of the consumer's dollar during the past few years.

**Key Words:** Apples, prices, price spreads, costs, margins.

In January 1972, the Secretary of Agriculture appointed a special Apple Marketing Study Team to examine the marketing problems of the apple industry.<sup>1</sup> The team met with industry leaders in a series of regional meetings in the spring of 1972. Retail pricing of apples and marketing margins from growers to retailers were among the hottest issues brought up at each meeting. Many growers believed their returns had not been increasing and that other segment in the marketing system had been taking an increasing proportion of the consumer dollar. Growers felt that all others engaged in marketing apples (shippers, packers, processors, wholesalers, and retailers) were covering their costs of operation, plus a profit. Shippers were equally concerned over retail margins and the effect of markups on sales of their product. Growers and shippers felt the chain retailer was treating fresh apples unfairly by putting higher margins and prices on apples than on other fruits. Thus, the Apple Marketing Team asked the Economic Research Service to do a special analysis of apple prices and price spreads. Attention was focused on both fresh apples and applesauce. Data used were from continuing research on prices and margins of fruits and vegetables. The article presents the results of the analysis.

The results indicate that Washington State growers have maintained their share of the consumer dollar for fresh apples at about 25 percent over the last 12 years, although their returns have been highly variable, depending on the size of the apple crop. Growers of

bagged Eastern McIntosh and Midwest Jonathans for the fresh market and of Eastern processing apples for applesauce received less than 20 percent of the consumer's dollar during the past 2 or 3 seasons. Data on varieties other than Washington Red Delicious were insufficient to determine if their results represent a longrun trend.

## Fresh Apples

Retail prices of fresh apples have increased sharply since 1960. The U.S. average retail price (BLS) of fresh all-purpose apples was 40 percent higher in 1971 than 11 years earlier. Retail prices increased for most apple varieties, and increases were sharper for the more popular varieties. Red Delicious is probably the variety most preferred for fresh use. The season average retail price of Washington Red Delicious apples in New York City was \$4.55 per carton higher in 1971/72 than 11 seasons earlier (Table A).

Both the retail price in New York City and the supply of Washington Red Delicious apples trended upward during the decade. Retail price changes were responsive to seasonal supply changes in 10 of the 11 seasons (top portion, Figure A). Reduced supplies resulted in higher apple prices in 7 seasons, and increased supplies resulted in lower prices in 3 seasons. Increased supplies in 1966/67 did not result in a lower retail price mainly because of much smaller apple crops in other producing areas.

The retail value of a 42-pound tray-packed carton of Washington Red Delicious apples in New York increased 48 percent between 1960/61 and 1971/72, shipping point prices increased 57 percent, and grower returns

<sup>1</sup> Recommendations of the Apple Marketing Team are summarized beginning on page 9 of this report.

Table A.—Apples, Washington Red Delicious: Season average prices, spreads, costs, and returns, New York City, 1960/61-1971/72<sup>1</sup>

Season	Retail price per pound	Retail value per carton <sup>2</sup>	Shipping point-retail spread		Shipping point price (fob) (returns to grower and packer)		Packing storage and selling cost <sup>3</sup>		Grower returns	
			Per carton	Percentage of retail value	Per carton	Percentage of retail value	Per carton	Percentage of retail value	Per carton	Percentage of retail value
	Cents	Dollars	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
1960/61 ...	23.4	9.44	5.38	57	4.06	43	1.75	19	2.31	24
1961/62 ...	23.6	9.50	5.13	54	4.37	46	1.74	18	2.63	28
1962/63 ...	23.0	9.26	5.41	58	3.85	42	1.74	19	2.11	23
1963/64 ...	21.1	8.51	5.15	61	3.36	39	1.74	20	1.62	19
1964/65 ...	24.9	10.03	5.93	59	4.10	41	1.78	18	2.32	23
1965/66 ...	25.8	10.39	5.77	56	4.62	44	1.79	17	2.83	27
1966/67 ...	26.5	10.67	6.21	58	4.46	42	1.80	17	2.66	25
1967/68 ...	29.6	11.93	5.79	49	6.14	51	1.82	15	4.32	36
1968/69 ...	34.0	13.71	6.91	50	6.80	50	2.29	17	4.51	33
1969/70 ...	29.7	11.96	7.70	64	4.26	36	2.34	20	1.92	16
1970/71 ...	33.8	13.64	7.60	56	6.04	44	2.34	17	3.70	27
1971/72 ...	34.7	13.99	7.62	54	6.37	46	2.46	18	3.91	28

<sup>1</sup> Combination Fancy and Extra Fancy, size 138 or larger, 42 pounds net weight per tray-packed carton. Season: October through April, 1960/61 through 1966/67; October through June, 1967/68 through 1971/72. <sup>2</sup> Returns to retailer for salable apples

(4-percent allowance for loss incurred during marketing process). <sup>3</sup> Based on f.o.b. packed price minus equivalent packing-plant-door returns for all Washington apples used fresh.

increased 69 percent (\$1.60) (Table A and bottom portion Figure A). The shipping point-retail spread (payment for marketing services performed beyond the shipping point) increased 42 percent. Packing, storage, and selling costs at the shipping point increased 41 percent.

A simple trend line was fitted to the data contained in Table A. Results indicated that the retail price of Washington State Red Delicious sold in New York City increased an average of 48 cents per carton per year in 1960/61-1971/72. During the same period the shipping point-retail spread increased 25 cents per carton per year; shipping point prices went up 23 cents; packing, storage, and selling costs rose 7 cents; and grower returns on the average rose 16 cents per carton.

Also, the market shares or percentage of retail value going to growers and other market factors remained almost constant over the period. If anything, the grower's share increased slightly. However, their returns are highly variable depending on the supply of apples available.

Comparable prices and spreads for Eastern Red Delicious and Eastern McIntosh were available for only the last 5 season, and for Midwestern Jonathans just 2 seasons later were available. Season average retail prices of Eastern Red Delicious and bagged Eastern McIntosh were 7 to 11 cents per pound lower than Washington Red Delicious in New York City during the 5 seasons (Tables A and B). Seasonal retail price changes were also smaller for both Eastern Red Delicious and McIntosh. The shipping point-retail spread per pound was considerably less for Eastern Red Delicious than for the other 2 varieties. The shipping point-retail spread was less than one-half the retail value of Eastern Red

Delicious and more than one-half for both Washington Red Delicious and Eastern McIntosh in most seasons.

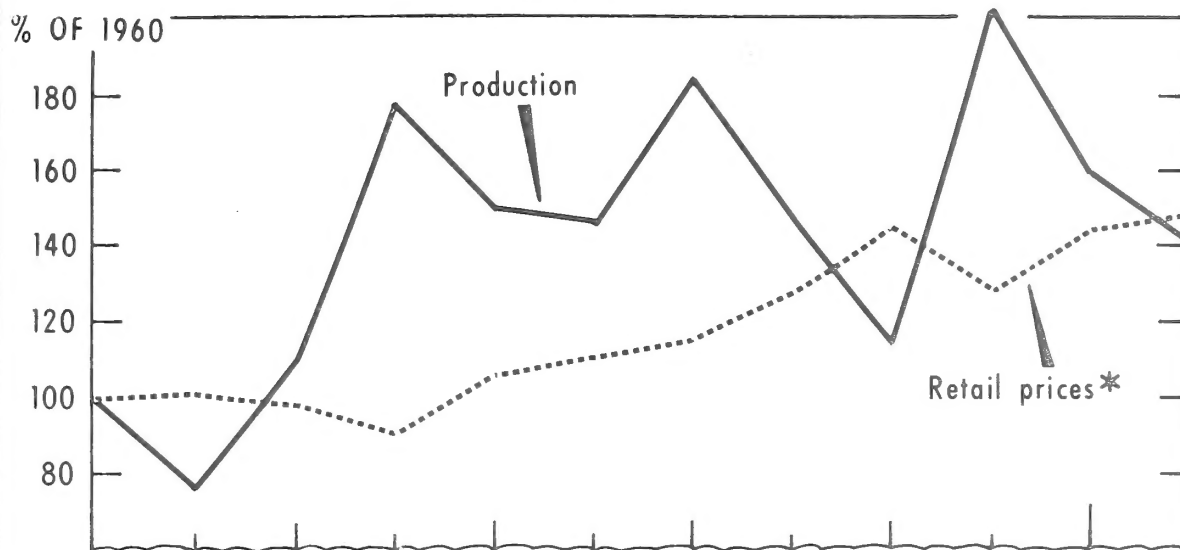
Packing, storage, and selling costs were lower in the East than in Washington State each season. Retail prices of Eastern Red Delicious were lower than for Washington Red Delicious. So despite lower packing, storage, and selling costs and a smaller shipping point-retail spread, grower returns per carton for Eastern Red Delicious were also smaller in 4 of the 5 seasons. However, growers of Eastern Red Delicious received a larger percentage of the retail value than did growers of Washington Red Delicious in all 5 seasons. Grower returns for Eastern McIntosh decreased each season and represented only 9 percent of their retail value in 1971/72. Michigan growers of bagged Jonathans, sold in Chicago, received 17 percent of the retail value in both of the last 2 seasons.

#### Applesauce

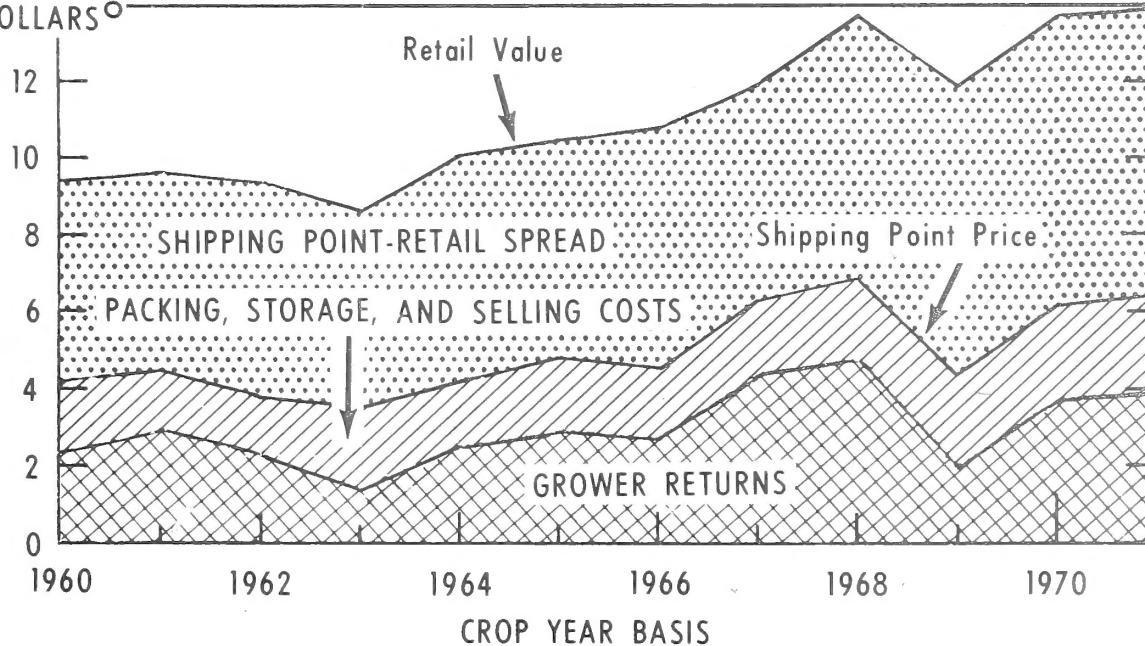
Prices and margins for applesauce were available for only the last 6 seasons. The retail price of a No. 303 can of applesauce averaged 21.4 cents in Pittsburgh in 1971/72, 4.6 cents higher than in 1965/66. The retail value of a case of 24 cans increased from \$4.04 to \$5.14 (Figure B and Table C). Retail prices increased each year, with larger increases occurring in 1967/68 and 1968/69. Most of the retail price increases were taken by marketing agencies as larger marketing margins. The return to Eastern growers for processing apples in a case of applesauce was only 78 cents in 1965/66 and only 74 cents in 1971/72. Growers received slightly more in intervening years, exceeding \$1.00 per case in 1967/68 and 1968/69. Growers received almost one-fourth of the retail value of canned applesauce in those 2 years, up

# WASHINGTON RED DELICIOUS APPLES

INDEXES OF PRODUCTION AND RETAIL PRICE IN NEW YORK CITY



PRICE, VALUE, SPREAD, COSTS, AND GROWER RETURNS SOLD IN NEW YORK CITY  
DOLLARS<sup>o</sup>



\*COMBINATION FANCY AND EXTRA FANCY, SIZE 138 OR LARGER.

<sup>o</sup>PER 42-POUND TRAY PACKED CARTON, COMBINATION FANCY AND EXTRA FANCY, SIZE 138 OR LARGER. SOURCE ECONOMIC RESEARCH SERVICE, USDA.

Figure A

Table B.—Apples: Season average prices, spreads, costs, and returns for Eastern Red Delicious and Eastern McIntosh sold in New York City, 1967/68-1971/72, and Midwest Jonathans sold in Chicago, 1970/71-1971/72

Variety and season	Retail price per pound	Retail value per carton <sup>1</sup>	Shipping point-retail spread		Shipping point price (fob) (grower and packer returns)		Packing storage and selling cost <sup>2</sup>		Grower returns	
			Per carton	Percentage of retail value	Per carton	Percentage of retail value	Per carton	Percentage of retail value	Per carton	Percentage of retail value
Eastern Red Delicious <sup>3</sup>	<i>Cents</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>	<i>Dollars</i>	<i>Percent</i>
1967/68 .	22.1	8.91	3.26	37	5.65	63	1.69	19	3.96	44
1968/69 .	25.1	10.12	4.11	41	6.01	59	2.07	20	3.94	39
1969/70 .	22.8	9.18	4.87	53	4.31	47	2.10	23	2.21	24
1970/71 .	22.7	9.16	4.00	44	5.16	56	2.10	23	3.06	33
1971/72 .	23.5	9.48	4.41	47	5.07	53	2.17	23	2.90	30
Eastern McIntosh (bagged) <sup>4</sup>										
1967/68 .	20.9	7.23	3.74	52	3.49	48	1.59	22	1.90	26
1968/69 .	23.8	8.22	4.40	53	3.82	47	1.96	24	1.86	23
1969/70 .	21.7	7.52	4.55	61	2.97	39	1.97	26	1.00	13
1970/71 .	22.9	7.93	5.09	64	2.84	36	1.97	25	.87	11
1971/72 <sup>1</sup>	24.2	8.36	5.52	66	2.84	34	2.05	25	.79	9
Midwest Jonathan (bagged) <sup>4</sup>										
1970/71 .	17.5	6.05	3.24	54	2.81	46	1.79	29	1.02	17
1971/72 .	18.5	6.39	3.47	54	2.92	46	1.87	29	1.05	17

<sup>1</sup>Returns to retailer for salable apples (4-percent allowance for loss incurred during marketing process). <sup>2</sup>Partly estimated.

<sup>3</sup>Combination fancy and extra fancy, size 138 and larger, 42

pounds net weight per tray-packed carton. <sup>4</sup>Fancy, 2¼ inches and larger, 12/3-lb. film bags, 36 pounds net weight per master container.

from about 20 percent in the 2 preceding years. Grower returns were 14 percent of the retail value in 1971/72, lowest of the 7 years.

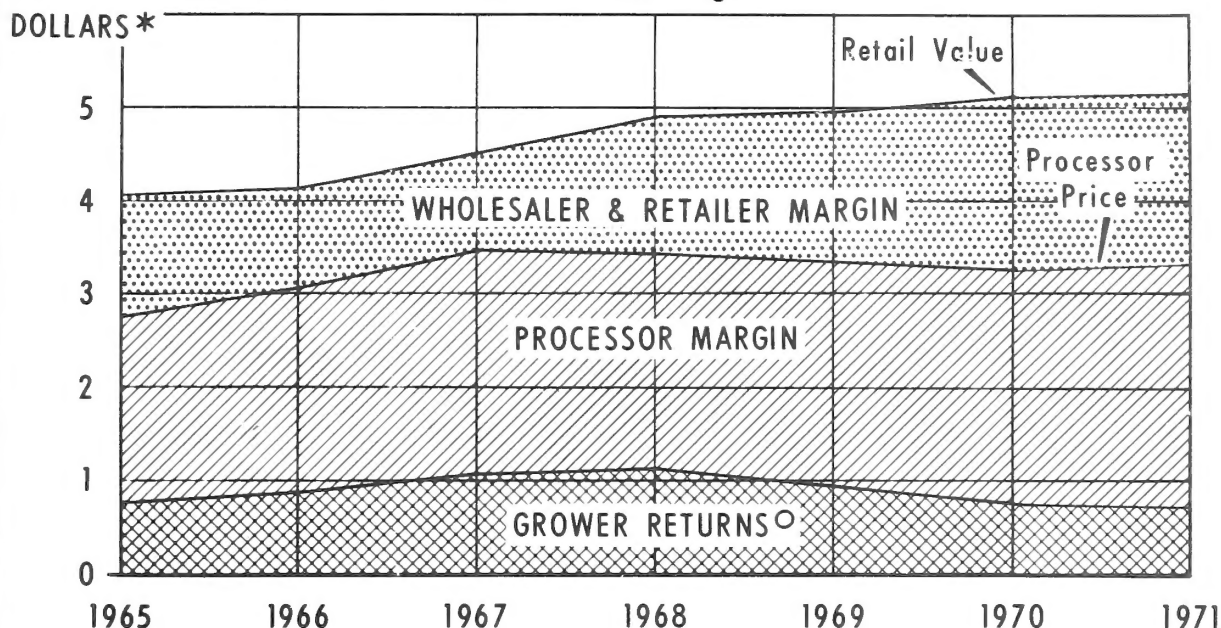
Both the processor margin (the amount received by those who perform the functions of processing, warehousing, and selling) and the wholesaler and retailer margin (the amount received by those who perform the

functions of transporting from the processor to the consuming city, wholesaling or brokerage, intracity transportation, and retailing) per case increased during the 7 years. The processor margin represented about one-half of the retail value of applesauce for each year. The wholesaler and retailer margin per case increased rather sharply after 1967/68 and was more than one-third of the retail value the past 2 seasons.



# CANNED APPLESAUCE

Retail Value, Processor Price, Grower Returns, and Marketing Margins  
Sold in Pittsburgh



\* DOLLARS PER CASE OF 24 NO. 303 CANS, CROP YEAR BASIS. RETURNS FOR 31 POUNDS (FARM WEIGHT) OF APPLES FOR CANNING AND FREEZING RECEIVED BY GROWERS IN N.Y., PA., MD., AND VA. SOURCE ERS, USDA.

Figure B

Table C.—Applesauce, canned: Season average prices, grower returns, and margins per case of 24/303 cans, and grower returns and margins as a percentage of retail price in Pittsburgh, 1965/66-1971/72

Season	Retail price per No. 303 can <sup>1</sup>	Retail value per case of 24/303 cans <sup>1</sup>	Processor price per case of 24/303 cans <sup>1,2</sup>	Grower return <sup>3</sup>		Margin					
						Total		Wholesaler and retailer		Processor	
				Per case	Percentage of retail price	Per case	Percentage of retail price	Per case	Percentage of retail price	Per case	Percentage of retail price
	Cents	Dollars	Dollars	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
1965/66 .	16.8	4.04	2.76	0.78	19	3.26	81	1.28	32	1.98	49
1966/67 .	17.2	4.12	3.06	.88	21	3.24	79	1.06	26	2.18	53
1967/68 .	18.8	4.51	3.49	1.10	24	3.41	76	1.02	23	2.39	53
1968/69 .	20.4	4.90	3.45	1.15	23	3.75	77	1.45	30	2.30	47
1969/70 .	20.5	4.93	3.35	.95	19	3.98	81	1.58	32	2.40	49
1970/71 .	21.3	5.11	3.25	.78	15	4.33	85	1.86	37	2.47	48
1971/72 .	21.4	5.14	3.32	.74	14	4.40	86	1.82	36	2.58	50

<sup>1</sup> Fancy grade. <sup>2</sup> F.o.b. Eastern plants. <sup>3</sup> Returns for 31 pounds (farm weight) of apples for canning and freezing received by growers in New York, Pennsylvania, Maryland, and Virginia.

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